

Name(s) \_\_\_\_\_

This instrument measures indirectly the amount of latent heat that would be required to produce saturation (100% R.H.) The sling psychrometer consists of two thermometers. One (the dry-bulb) is an ordinary glass thermometer. The other (the wet-bulb) has it's bulb covered with a piece of cloth. The cloth must be soaked in water just before the measurement is made. Then the psychrometer is whirled until the wet-bulb temperature stops falling.

### Procedure:

1. Use your sling psychrometer to measure dry bulb and wet bulb temperature at the various locations.
2. Use the attached charts to find dew point and relative humidity at each location.
3. Graph dew point and relative humidity of each location.
4. Complete the conclusion questions.

[illegible]

## Conclusions

1. Are the relative humidity's you measured similar? Do you expect them to be? Explain results and reasoning.
2. How does air conditioning alter the relative humidity of a room? (Hint: What does an air conditioner do in addition to cooling the air?)
3. How does heating a room alter the relative humidity?
4. Why does a beverage can "sweat" on a hot humid summer day?
5. Why do eye glasses fog over when entering a warm building on a cold day?
6. Why do bathroom mirrors fog while you are taking a shower?
7. Why do you see a cloud form from a clothes dryer exhaust vent?
8. Explain why one may see fog over a lake during the morning, whereas the highway nearby is clear.
9. How does relative humidity affect the comfort of people? Explain how humans bodies react/manage changing humidity's.
10. The daily relationship between temperature and humidity is such that the lowest humidity should occur in the afternoon hours. It is during these times, however, when it often seems to be most humid and uncomfortable. What could be the reason for this *perceived* inconsistency?
11. Discuss any possible errors that may have been made during your experiments which may have caused inaccurate results.



Table 2

Dry-Bulb Temp. (°C)	Relative Humidity (%)																			
	Difference Between Wet- and Dry-Bulb Temp. (°C)																			
	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°
-10	67	35																		
-9	69	39	9																	
-8	71	43	15																	
-7	73	48	20																	
-6	74	49	25																	
-5	76	52	29	7																
-4	77	55	33	12																
-3	78	57	37	17																
-2	79	60	40	22																
-1	81	62	43	26	8															
0	81	64	46	29	13															
1	83	66	49	33	17															
2	84	68	52	37	22	7														
3	84	70	55	40	26	12														
4	85	71	57	43	29	16														
5	86	72	58	45	33	20	7													
6	86	73	60	48	35	24	11													
7	87	74	62	50	38	26	15													
8	87	75	63	51	40	29	19	8												
9	88	76	64	53	42	32	22	12												
10	88	77	66	55	44	34	24	15	6											
11	89	78	67	56	46	36	27	18	9											
12	89	78	68	58	48	39	29	21	12											
13	89	79	69	59	50	41	32	23	15	7										
14	90	79	70	60	51	42	34	26	18	10										
15	90	80	71	61	53	44	36	27	20	13	6									
16	90	81	71	63	54	46	38	30	23	15	8									
17	90	81	72	64	55	47	40	32	25	18	11									
18	91	82	73	65	57	49	41	34	27	20	14	7								
19	91	82	74	65	58	50	43	36	29	22	16	10								
20	91	83	74	66	59	51	44	37	31	24	18	12	6							
21	91	83	75	67	60	53	46	39	32	26	20	14	9							
22	92	83	76	68	61	54	47	40	34	28	22	17	11	6						
23	92	84	76	69	62	55	48	42	36	30	24	19	13	8						
24	92	84	77	69	62	56	49	43	37	31	26	20	15	10	5					
25	92	84	77	70	63	57	50	44	39	33	28	22	17	12	8					
26	92	85	78	71	64	58	51	46	40	34	29	24	19	14	10	5				
27	92	85	78	71	65	58	52	47	41	36	31	26	21	16	12	7				
28	93	85	78	72	65	59	53	48	42	37	32	27	22	18	13	9	5			
29	93	86	79	72	66	60	54	49	43	38	33	28	24	19	15	11	7			
30	93	86	79	73	67	61	55	50	44	39	35	30	25	21	17	13	9	5		
31	93	86	80	73	67	61	56	51	45	40	36	31	27	22	18	14	11	7		
32	93	86	80	74	68	62	57	51	46	41	37	32	28	24	20	16	12	9	5	
33	93	87	80	74	68	63	57	52	47	42	38	33	29	25	21	17	14	10	7	
34	93	87	81	75	69	63	58	53	48	43	39	35	30	28	23	19	15	12	8	5
35	94	87	81	75	69	64	59	54	49	44	40	36	32	28	24	20	17	13	10	7